

Notice of Allowability

Application No.

10/056,295

Examiner

William J. Klimowicz

Applicant(s)

SCHRECK ET AL.

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the After-Final Amendment filed on January 8, 2006, now ENTERED.
2. ☒ The allowed claim(s) is/are 108-165.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Request for Withdrawal of Final Rejection

The Applicant's request for a withdrawal of the rejection made Final on October 31, 2006 has been deemed moot. For the reasons of record, including the Applicant's arguments and amendments, in addition to the Examiner's comments below, the application is deemed, by a preponderance of the evidence, to meet the statutory requirement under 35 USC 102 and 103.

After-Final Amendment

The proposed After-Final Amendment filed by the Applicant on January 8, 2007 has been considered and entered in FULL

Reasons for Allowance

The following is an Examiner's statement of reasons for allowance:

The prior art of record fails to fairly, teach, show or suggest, by either anticipating or rendering obvious, the invention as set forth in the claims of the instant application.

Furthermore, an update of a search previously made does not detect the combined claimed elements as set forth in the pending claims. Additionally, the reasons for allowance of the claims over the prior art of record is believed to be clear from the prosecution history taken as a whole. More particularly, the instant invention (as set forth in independent claims 108, 125, 141, 150, 158-165) provides for an asymmetrical disk (and method of manufacturing a disk drive requiring such asymmetrical disk structure), wherein the asymmetrical disk includes a raised stiffener or outer ridged section, increasing the disk rigidity, extending at least approximately

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.001 millimeters from a flat section of a second side of a disk, which opposes a first data bearing disk side.

Additionally, as per claim 158, after reconsideration of the claims and disclosure as a whole, the Examiner now concurs with the Applicants regarding the allowability of claims 158, 159 and 162, previously rejected. Moreover, none of the prior art taken alone or in combination fairly teaches the claimed subject set forth in all allowed claims, for the reasons espoused by the Applicant, and in addition to the Examiner's comments regarding claims 158, 159 and 162.

More concretely claim 158 sets forth a hard disk drive including, *inter alia*, an asymmetrical storage disk that including a body region, a first side region that stores data, a second side region opposite the first side region. Furthermore, a stiffener is provided which increases the rigidity of the storage disk and guides the flow of fluid within the drive housing. The second side region has an exposed second side surface including an outer flat section and an outer-ridged section that extends at least approximately 0.001 millimeters above the outer flat section.

Concerning claim 159, the claimed subject matter includes, *inter alia*, a disk drive having an asymmetrical storage disk that is rotatably coupled to a drive housing. The storage disk includes a first side region that stores data, a second side region opposite the first side region, and a stiffener that increases the rigidity of the storage disk. The stiffener has a width that changes along a direction generally from the inner diameter to the outer diameter. The second side region has an exposed second side surface including an outer flat section and an outer-ridged section that extends at least approximately 0.001 millimeters above the outer flat section.

Turning now to claim 162, the claimed subject matter includes, inter alia, a method for manufacturing a disk drive. The method includes the steps of rotatably coupling a storage disk to a drive housing, wherein the storage disk has a first side region that stores data and a second side region opposite the first side region. The second side region having an exposed second side surface including an outer flat section and stiffener that extends at least approximately 0.001 millimeters above the outer flat section. The stiffener increases the rigidity of the storage disk, and includes a width that is measured substantially parallel to the outer flat section, the width being non-uniform.

The closest reasonably construed prior art includes Asai et al. (US 5,476,700), who discloses a hard (compact) disk for use in a hard optical disk drive and method for manufacturing such a hard (injection-molded) disk, comprising an asymmetrical storage disk (1) a first side region that stores data (5) (exposed bottom side of disk as seen in FIG. 1b) and a second side region (e.g., the upper exposed side of disk (1) as seen in FIG. 1b) opposite the first side region, the second side region (upper side as seen in FIG. 1b) including an exposed outer flat section (e.g., upper flat surface as seen in FIG. 1b) and broadly construed "raised protuberance" (10). Asai et al. (US 5,476,700), remains completely silent with respect to whether this raised protuberance actually functions as a stiffener. There is no anticipatory or obviousness evidence in the meaning and scope of 35 USC 102 and 103, to support such an assumption. As such all pending claims are considered allowable for at least this reason, in particular with the dimensional attributes of the claimed stiffener or outer ridged section extending at least approximately 0.001 millimeters above the outer flat section of the disk opposite to the first data side.

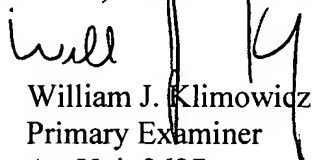
As such, all the claims are allowed as presently amended.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (571) 272-7577. The examiner can normally be reached on Monday-Thursday (6:30AM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


William J. Klimowicz
Primary Examiner
Art Unit 2627

WJK

ASYMMETRIC DISK SURFACE PROPERTIES IN ONE HEAD DISK DRIVES

Erhard Schreck, et al.

Attorney Docket No. 3123-424 / 20011.03

Replacement Sheet

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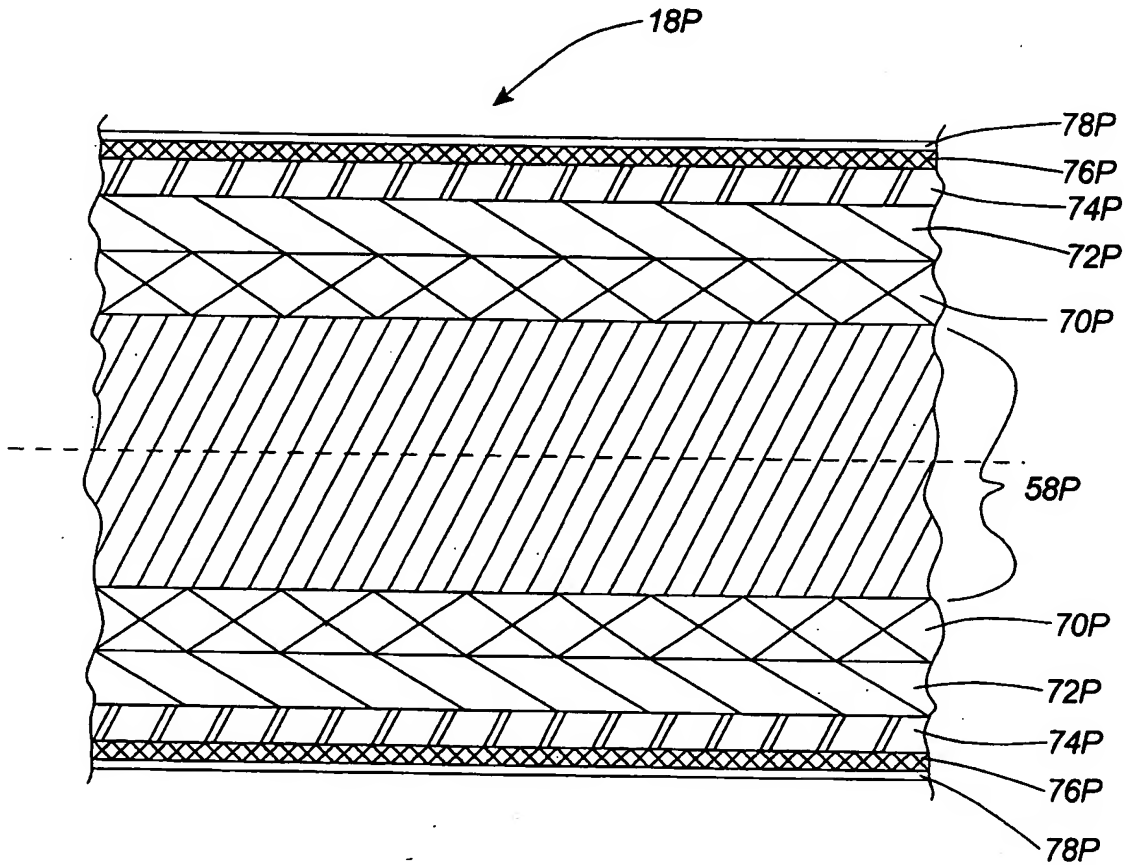


Fig. 1 (Prior Art)



ASYMMETRIC DISK SURFACE PROPERTIES IN ONE HEAD DISK DRIVES

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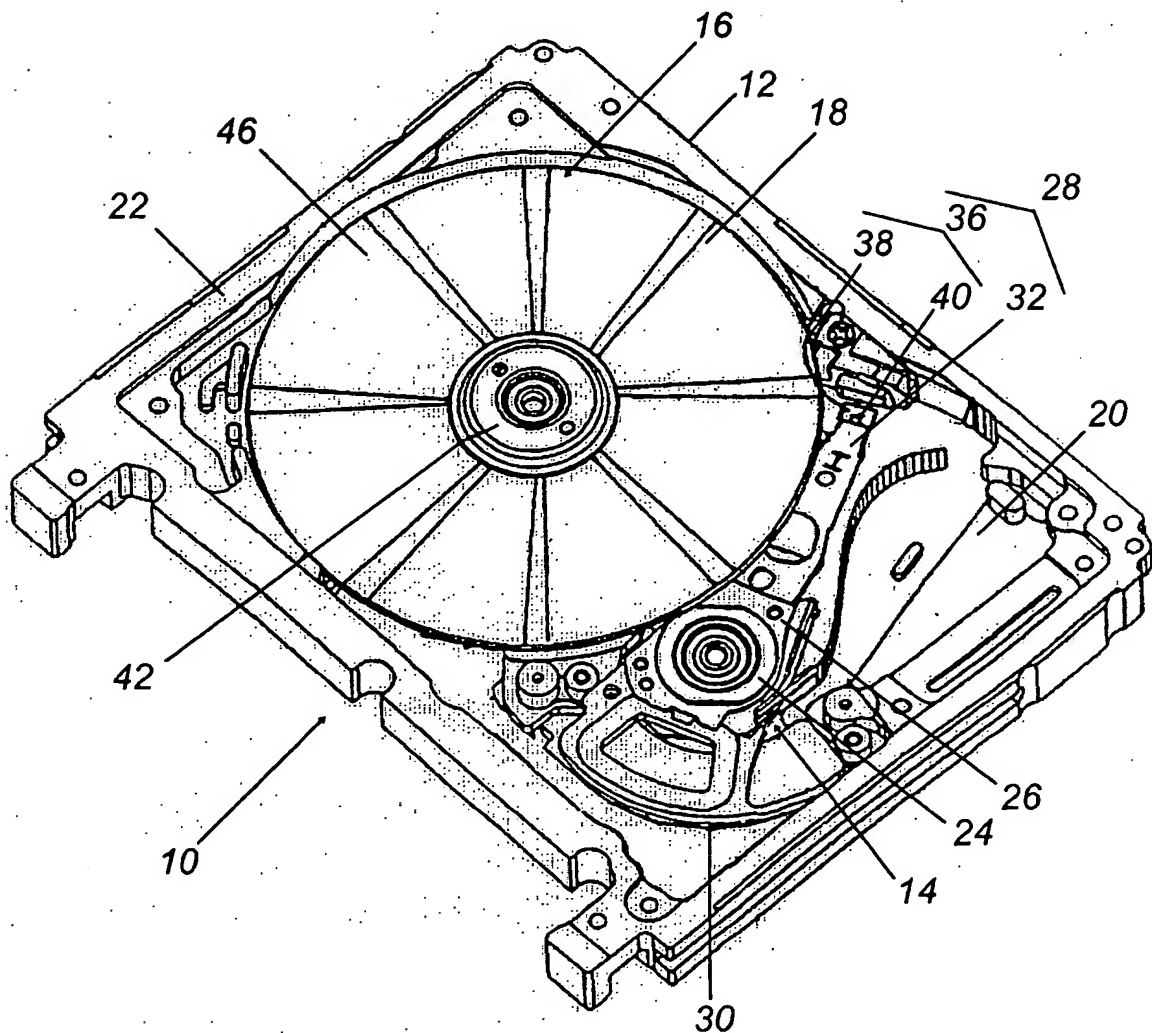


Fig. 2A

ASYMMETRIC DISK SURFACE PROPERTIES IN ONE HEAD DISK DRIVES

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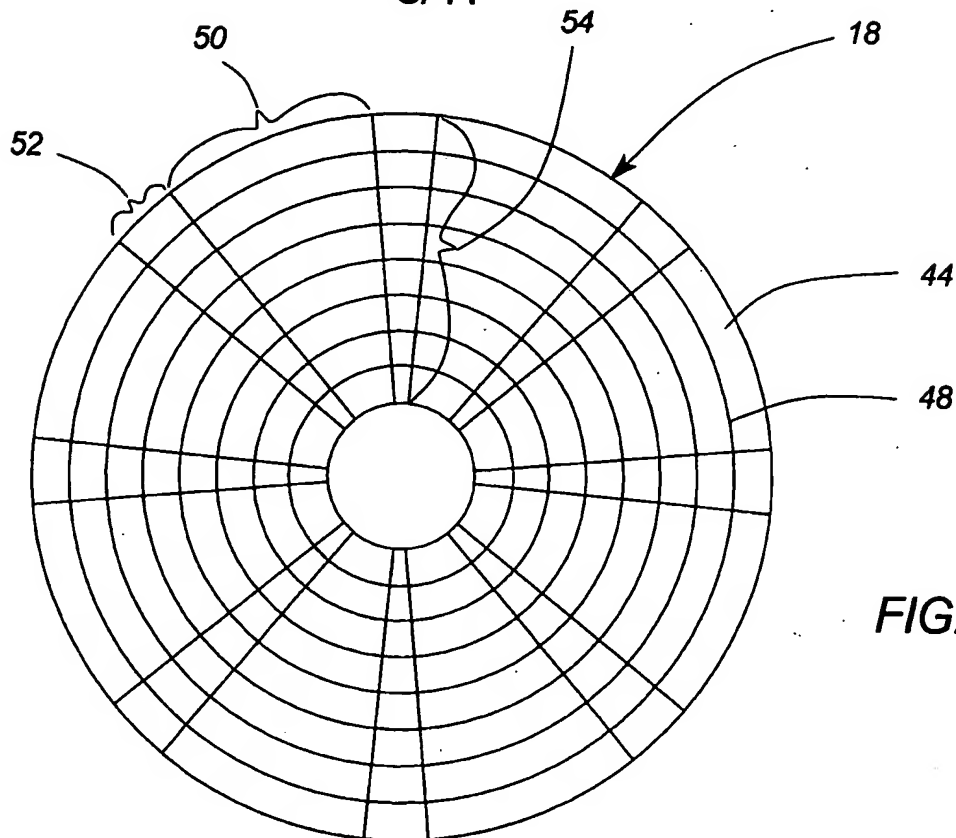
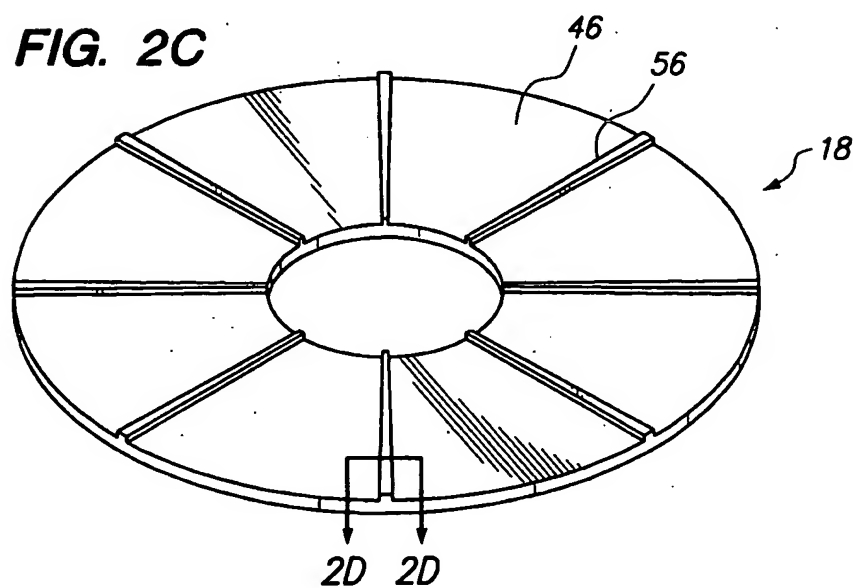
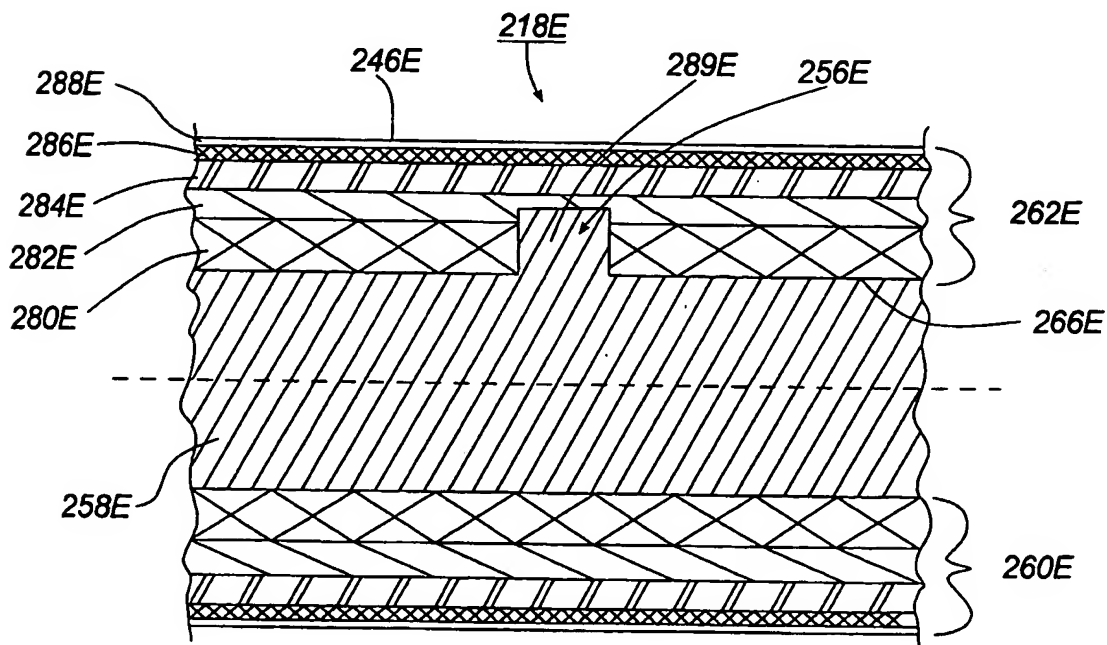


FIG. 2B

FIG. 2C







ASYMMETRIC DISK SURFACE PROPERTIES IN ONE HEAD DISK DRIVES

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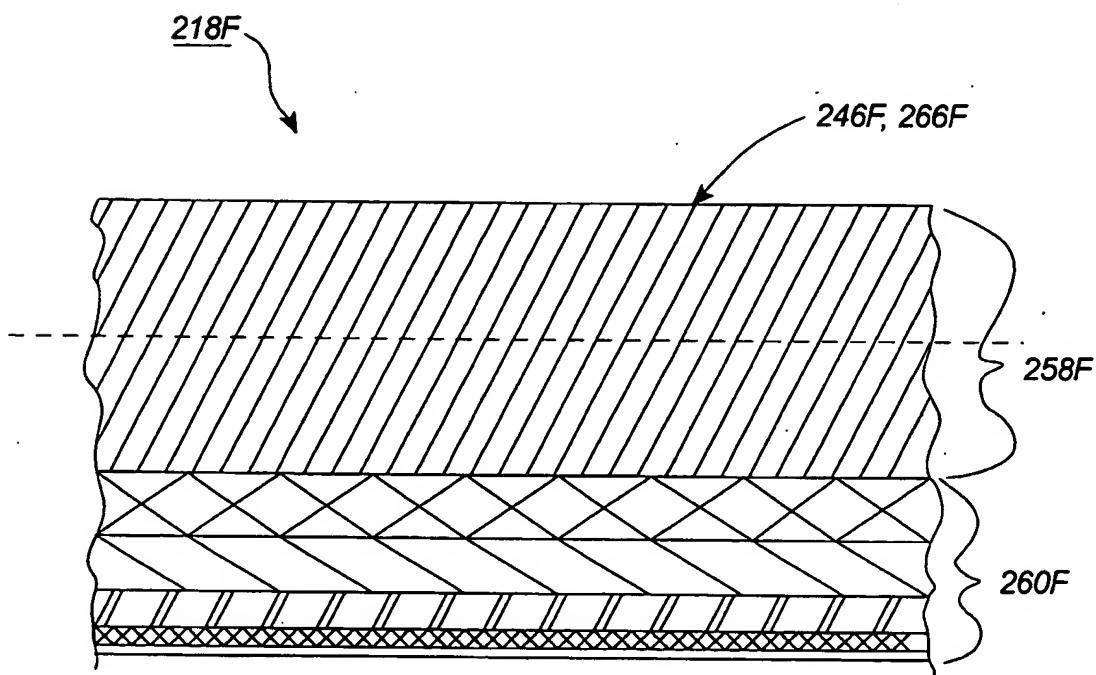


Fig. 2F



ASYMMETRIC DISK SURFACE PROPERTIES IN ONE HEAD DISK DRIVES

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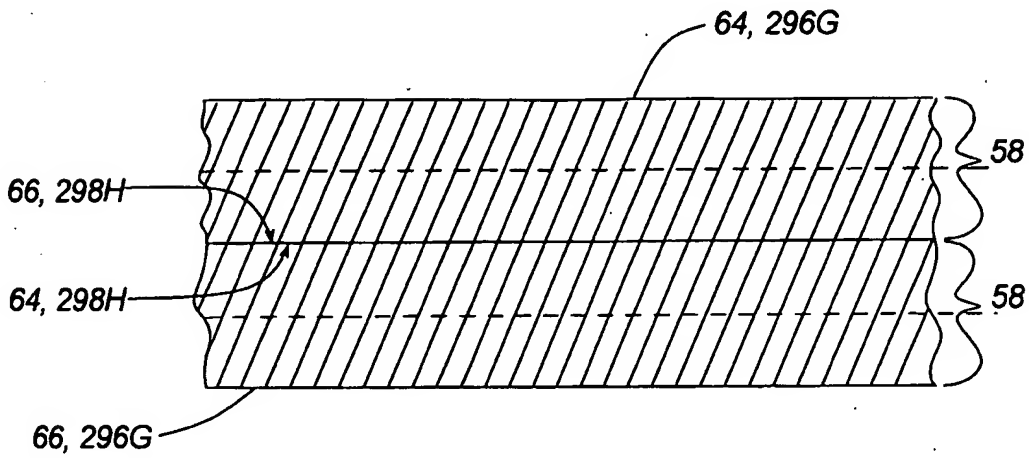


Fig. 2G

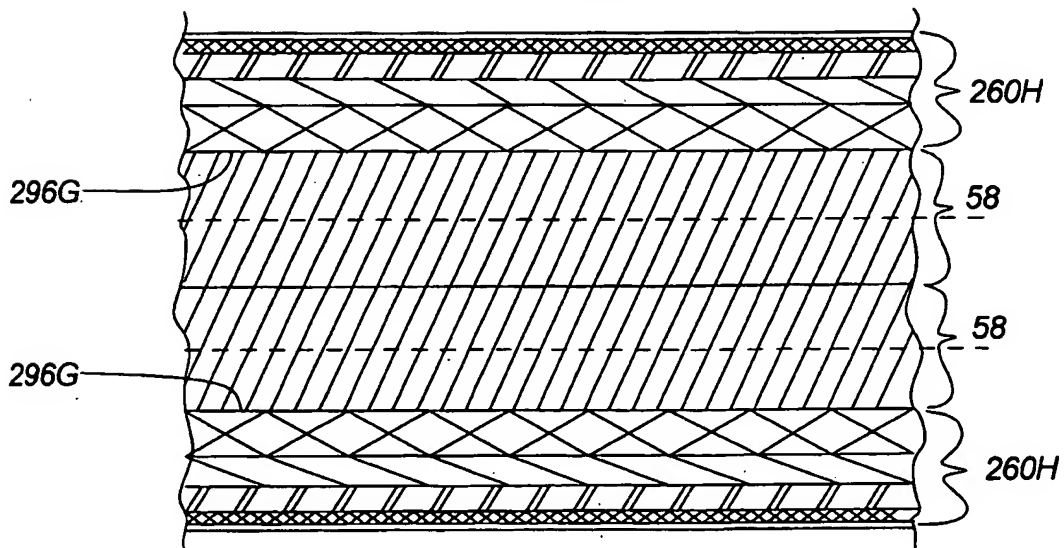
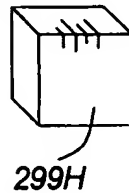


Fig. 2H



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ASYMMETRIC DISK SURFACE PROPERTIES IN ONE HEAD DISK DRIVES

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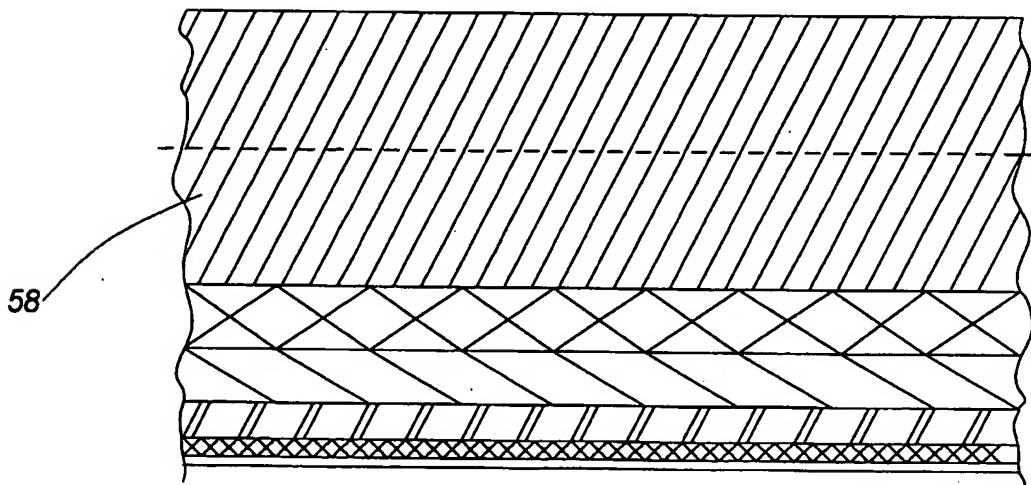
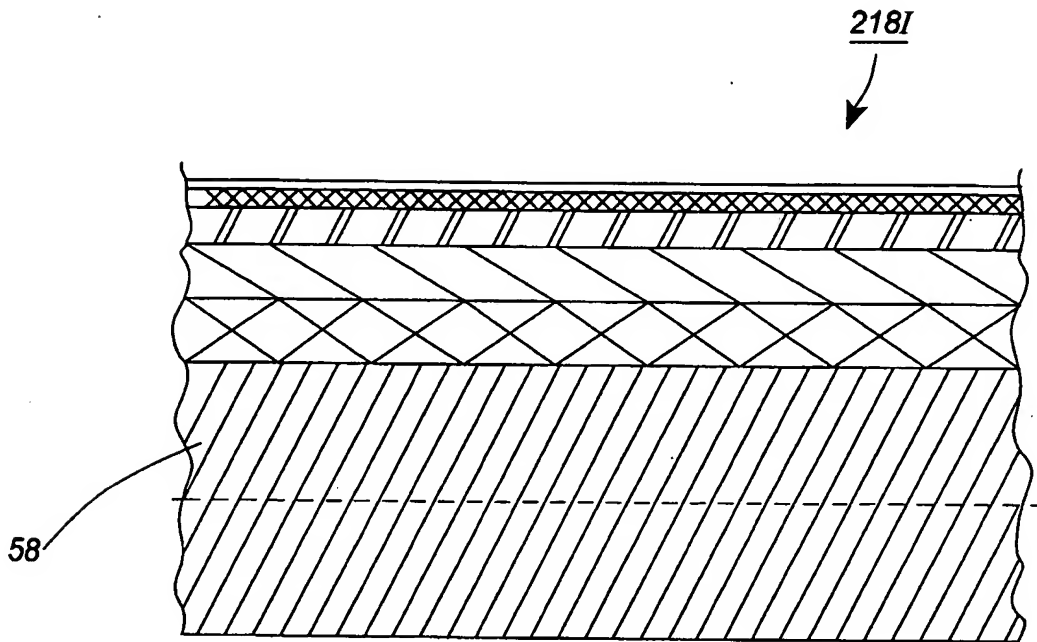


Fig. 2I

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ASYMMETRIC DISK SURFACE PROPERTIES IN ONE HEAD DISK DRIVES

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FIG. 3A

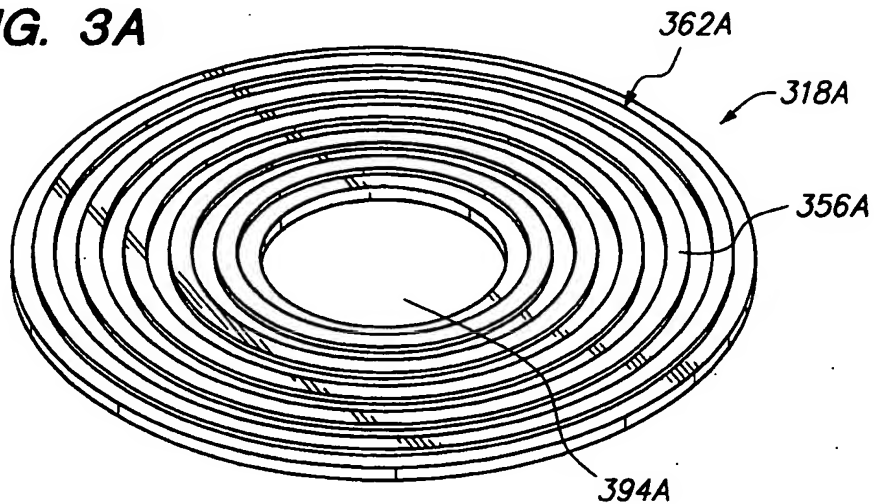


FIG. 3C

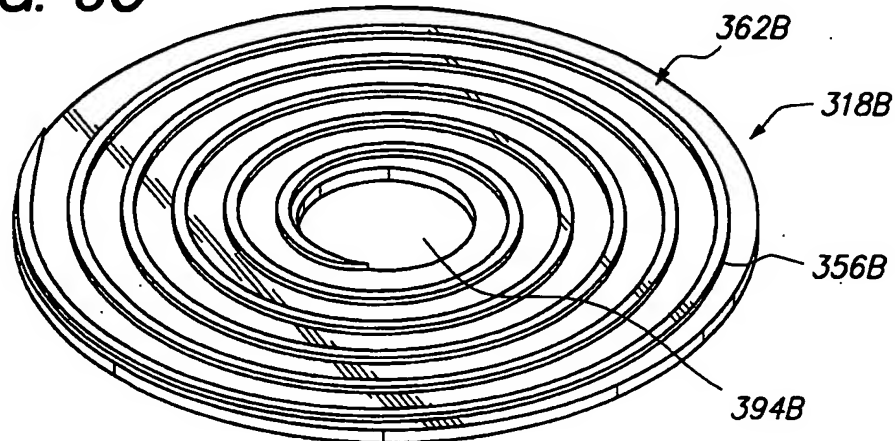
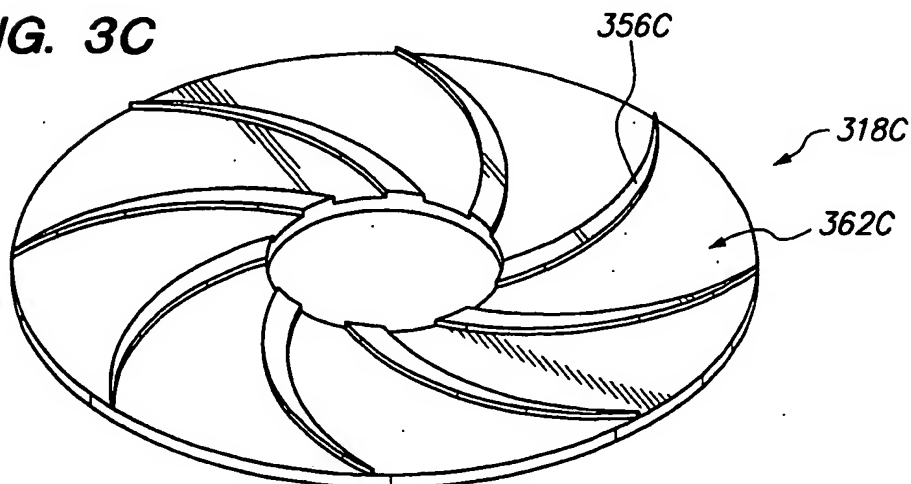


FIG. 3C



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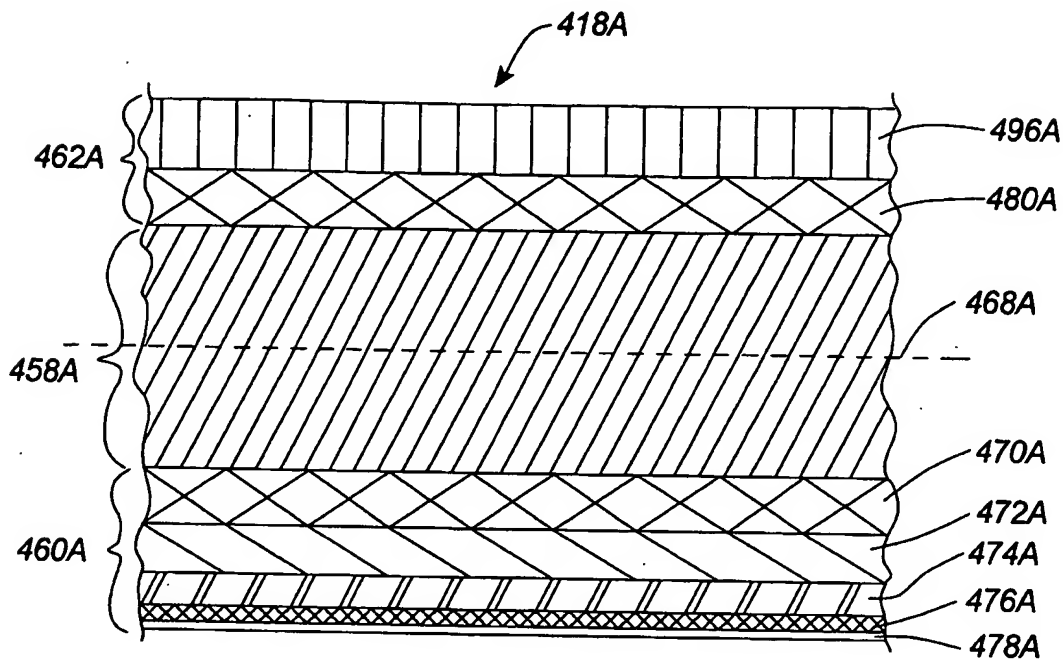


Fig. 4A

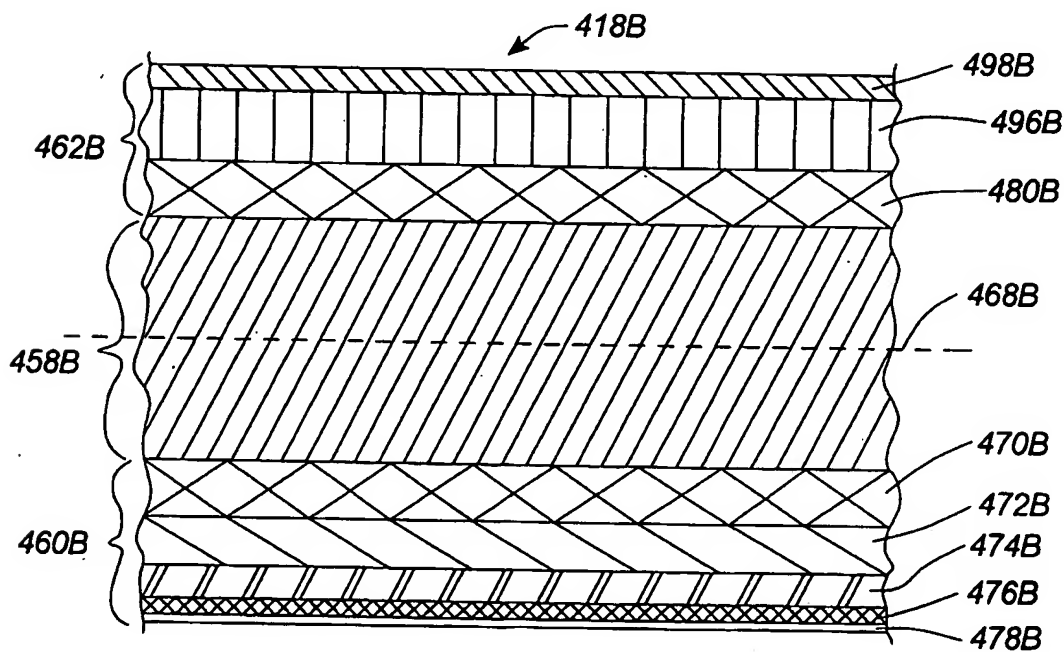


Fig. 4B



ASYMMETRIC DISK SURFACE PROPERTIES IN ONE HEAD DISK DRIVES

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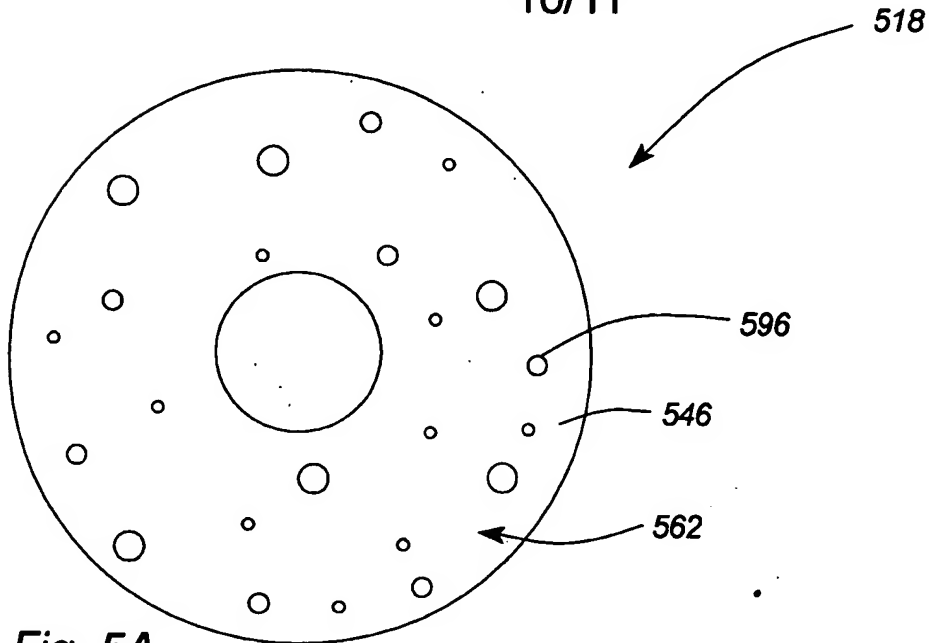


Fig. 5A

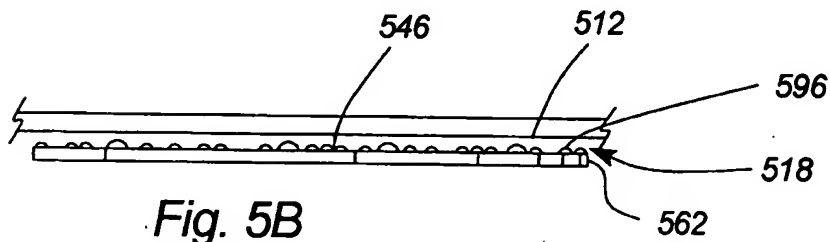


Fig. 5B

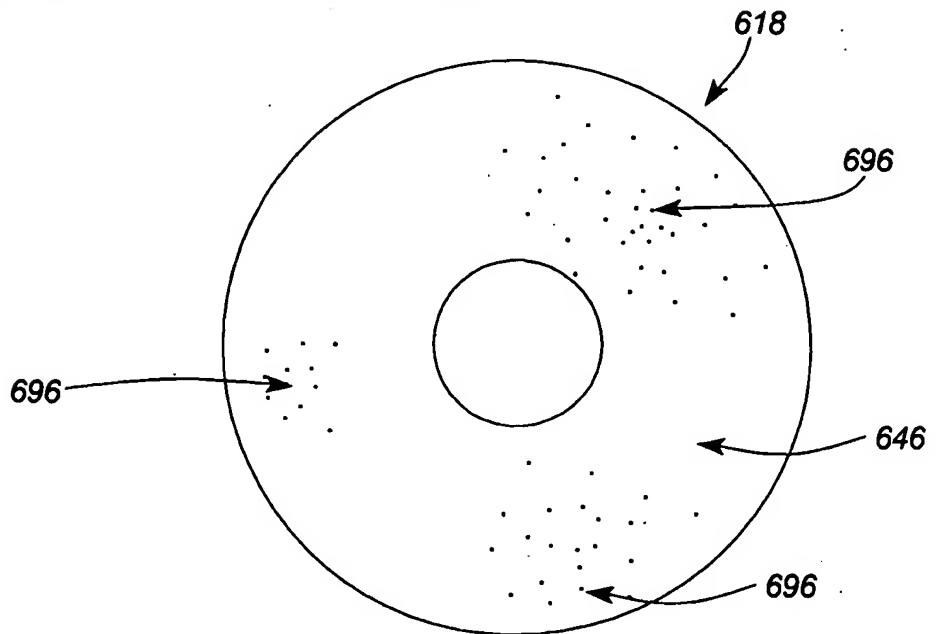


Fig. 6

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ASYMMETRIC DISK SURFACE PROPERTIES IN ONE HEAD DISK DRIVES

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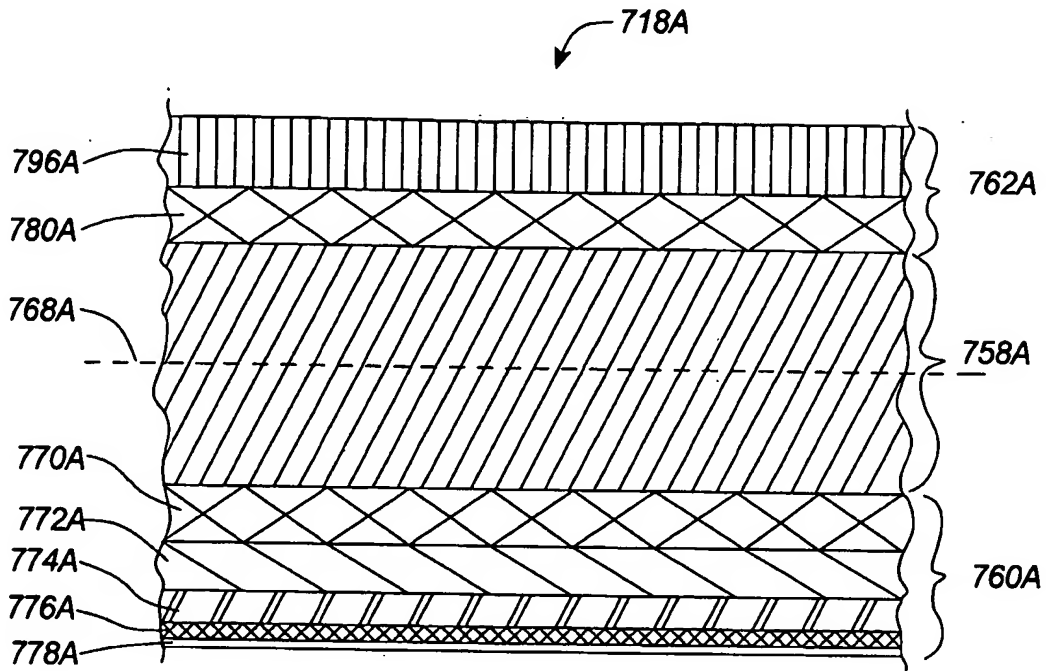


Fig. 7A

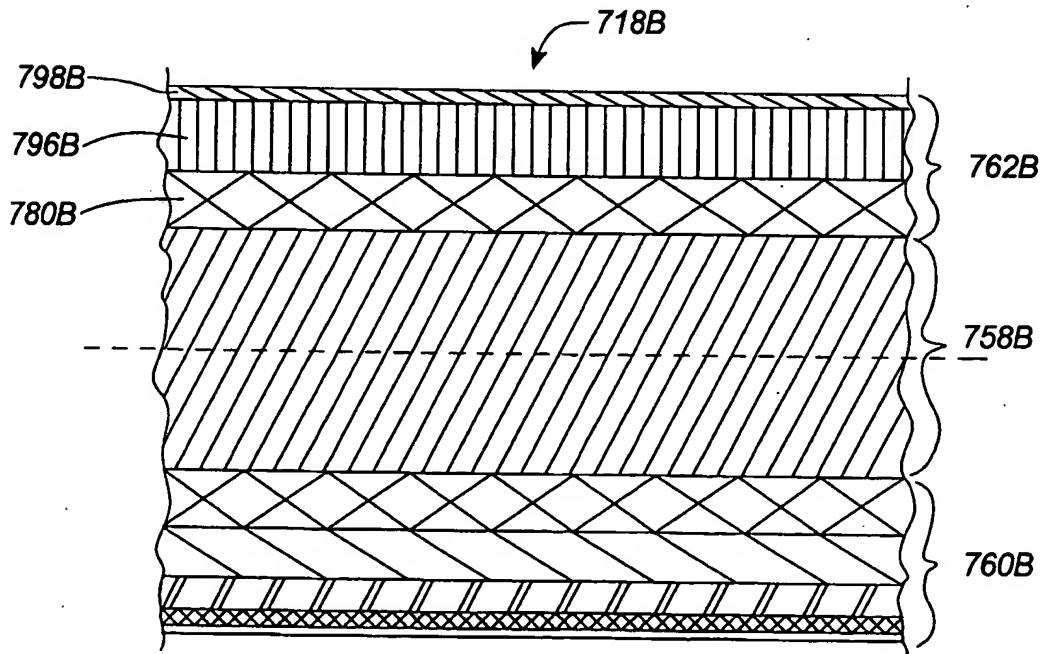


Fig. 7B